The reporting of GBON data to WIS

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GBON reporting process in WIS1/GTS

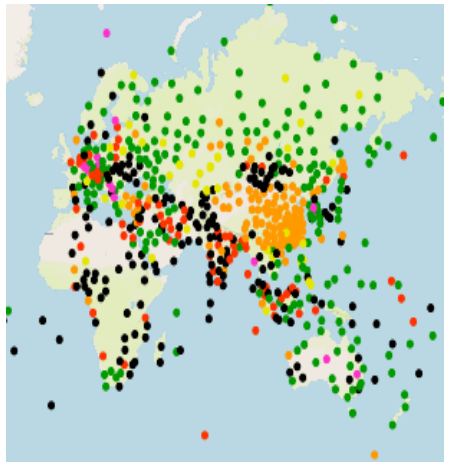
1. Define the WIGOS identifier
2. Register the station on OSCAR (with metadata)
3. Notify the RTH and the principal GISC
4. Notify the WMO secretariat(wis@wmo.int)
5. Convert to BUFR format
6. Publish hourly data to GTS/WIS(RTH and GISC)
7. Check with RTH and GISC

BUFR

WIGOS Identifier

OSCAR

WDQMS



RTH

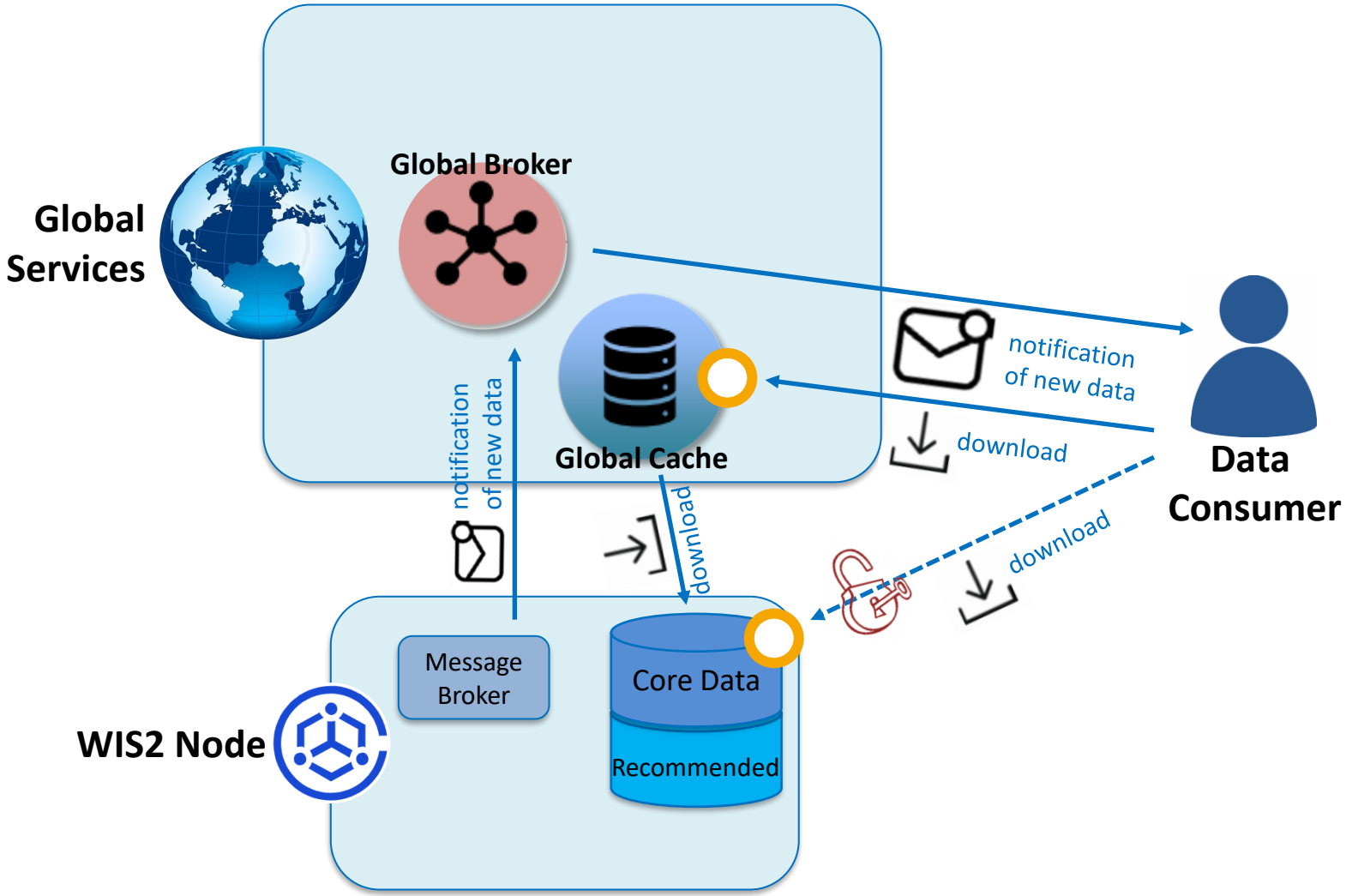
GISC

WIS2 nodes and Global Services

- WIS2 node is the component to provide data and associated metadata
- WIS2 node replaces the GTS Message Switching System
- NCs / DCPCs are going to implement a WIS2 Node to exchange data in WIS2
- The WIS2 Node shares data from an HTTPS service and sends notifications to MQTT subscribers
- No need to provide access to all the users in the world, only to some WIS2 Global Services

WIS 2.0 concept: real-time data notifications

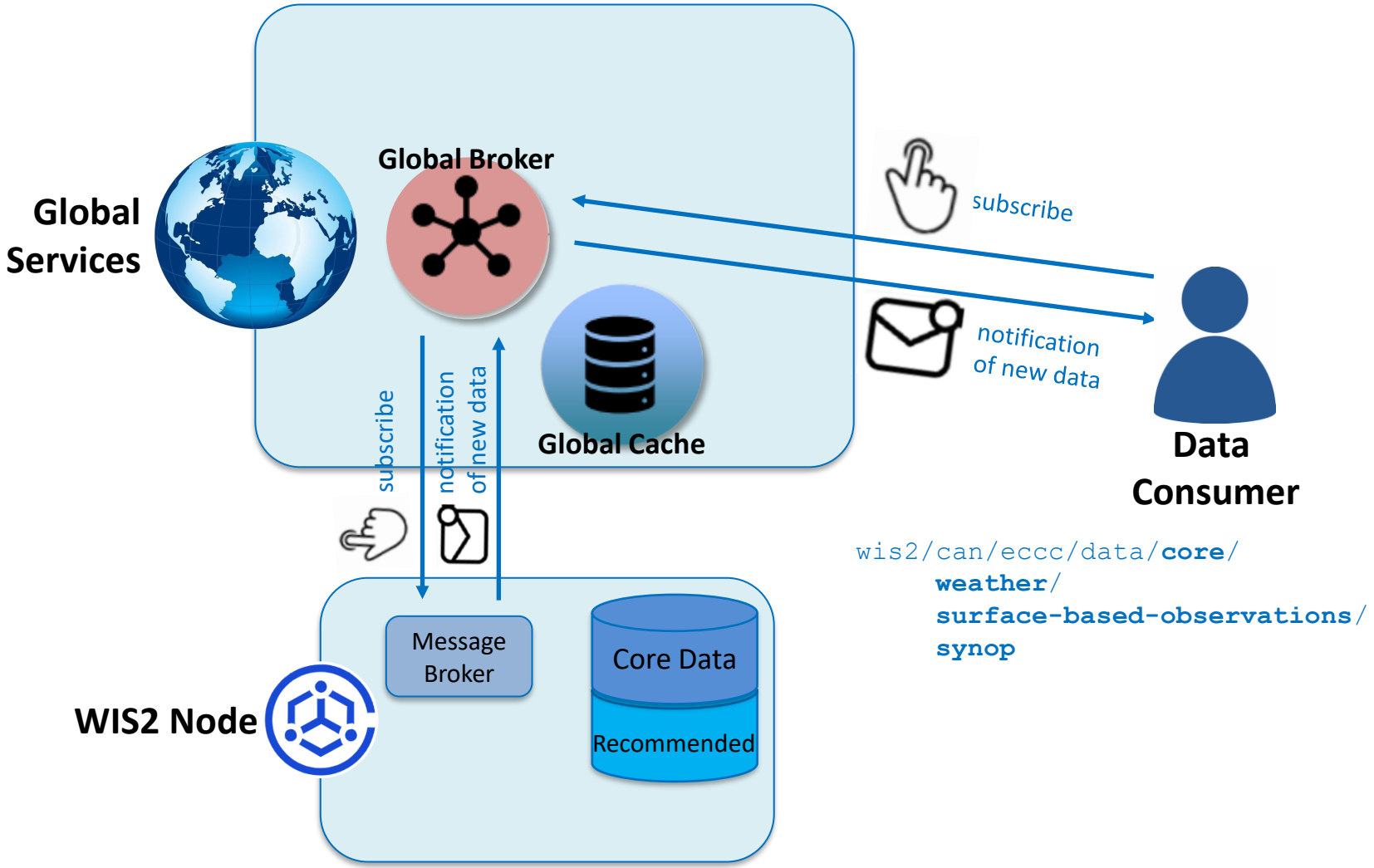
- When new data becomes available at the **WIS2 Node**, it generates a **notification message** to advertise data availability and publishes it on a **Message Broker**.
- The notification message gets pushed to a highly-available, high-performance **Global Broker** that re-publishes the message for global consumption.
- (Note: the **Global Cache** uses the notification message to trigger download of a data copy for highly-available, high-performance distribution. The Global Cache also publishes it's own data-availability notification message.)
- The information in the notification message(s) tells the **Data Consumer** where to download the data from.



WIS 2.0 concept: finding what you need - subscription

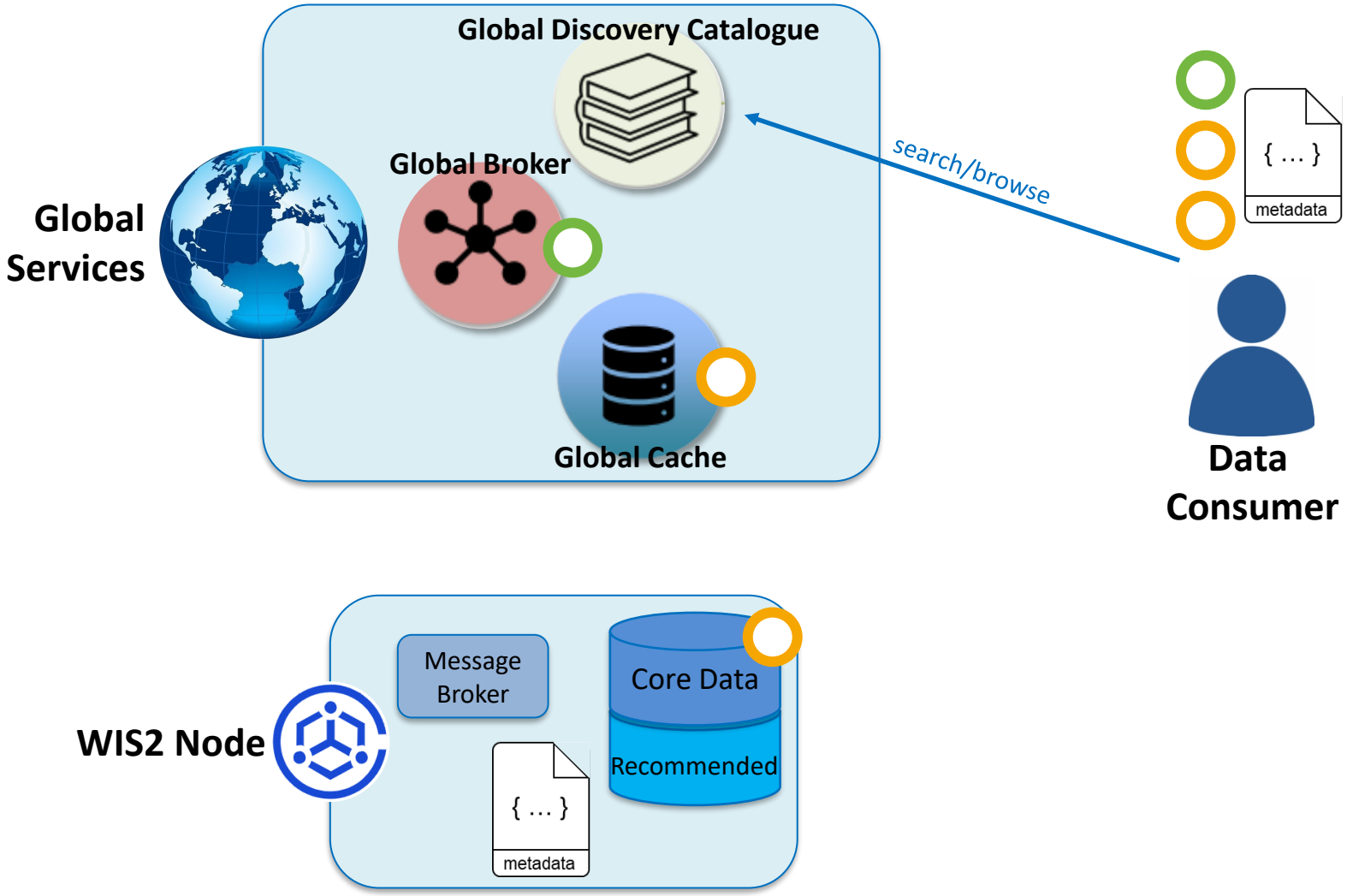
- **Data Consumers subscribe** to **Topics** at the Global Broker so that notification messages for that topic are immediately sent to them.
- There is a unique **Topic** for each dataset.
- **Topic Structure** organised according to [Annex 1 of the Unified Data Policy] to make it easy to find the topic associated with the data you want.

```
wis2
└ country
  └ centre-id
    └ resource-type
      └ data-policy
        └ earth-system-discipline
          └ discipline-subcategory
            └ …
```



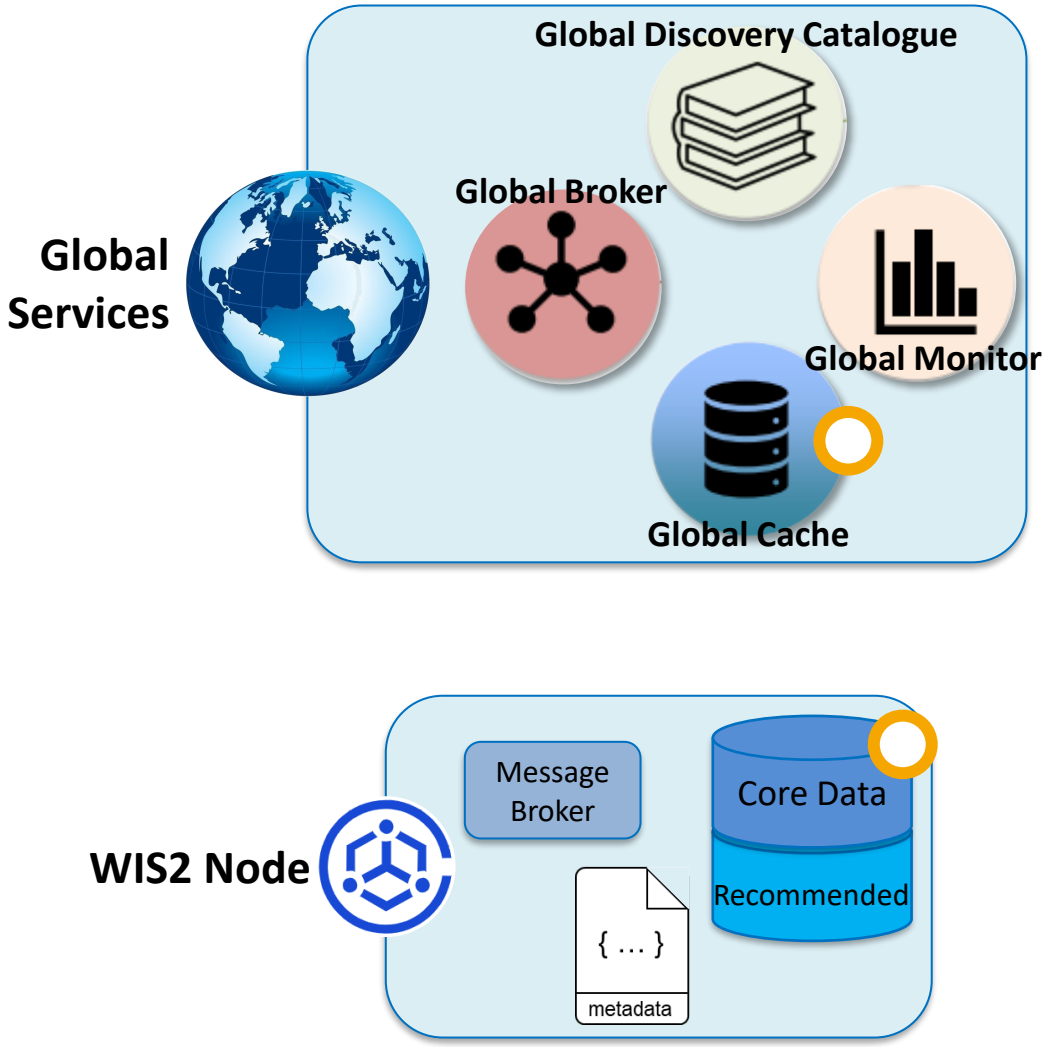
WIS 2.0 concept: finding what you need - discovery

- Data Publishers create **Discovery Metadata** to describe the datasets they make available from their WIS2 Node.
- These metadata records are collected and published at the **Global Discovery Catalogue** (GDC).
- Data Consumer can search/browse the GDC to find the datasets they need.
- GDC organises datasets according to the same standard scheme used in the **Topic Hierarchy**.
- Discovery Metadata records tell Data Consumers where they can **download** data and **subscribe** to notifications.



WIS 2.0 concept: monitoring data sharing

- Finally – WIS 2.0 introduces a **Global Monitor** service that will track what data is made available and whether that data can effectively be accessed by Data Consumers.
- The Global Monitor will provide a 'dashboard' that will support **tracking of compliance** against both the **Unified Data Policy** resolution and **Global Basic Observing Network (GBON)** technical regulations.



Global Services

Downloads core data

Subscribes to topics

Discovers data/services

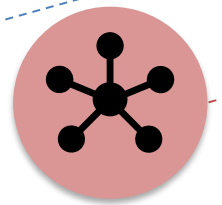
Downloads recommended data

WIS2 node

Global Cache

A storage providing a copy of the WMO Core data from the NCs/DCPCs to be accessed by the users.

- **Data will be open to everyone.**
- **Some Global Caches are required globally for resilience.**



Global Broker

Providing notifications of all the data available in the Global Caches or in originating centers.

Users will subscribe to a Global Broker to get notifications of new data to be downloaded from Global Caches or WIS2 node

Global Discovery Catalogue

It is a discovery catalogue of data and services.

- **Provides an API to list the available data and services**
- **Harvests metadata from the WIS2 Nodes.**

Global Monitoring

Monitoring of data exchanged in WIS2.

- **Global Monitoring Center will collect statistics from Sensor Centers and provide web accessible maps and results.**

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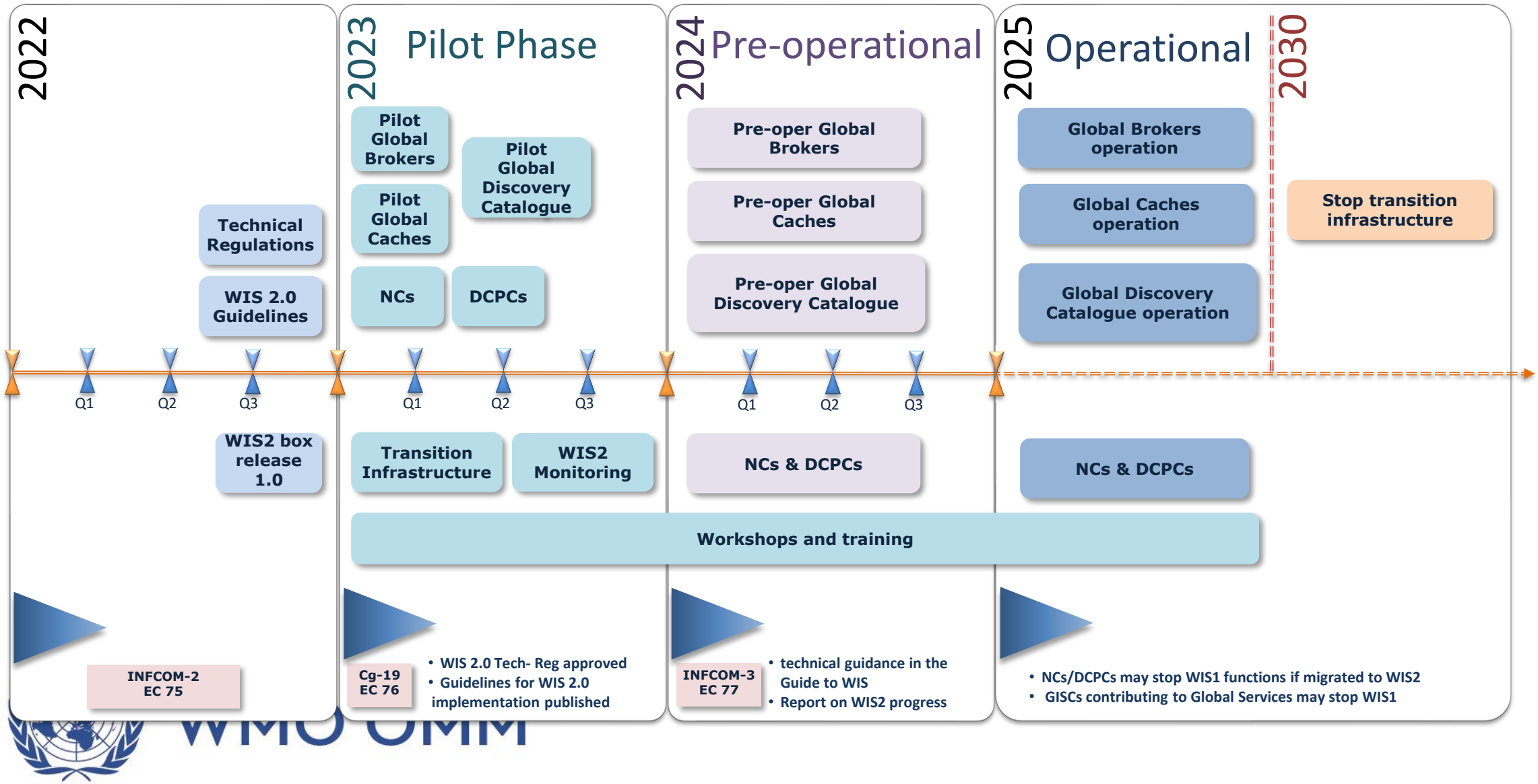
WIS2 implementation timeline



Goals of the pilot phase

Deploy Global Services

Deploy WIS2 Node/WIS2 box

Refine WIS 2.0 architecture

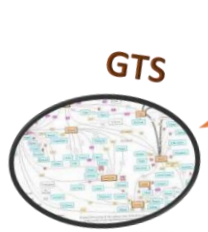
Improve technical aspects

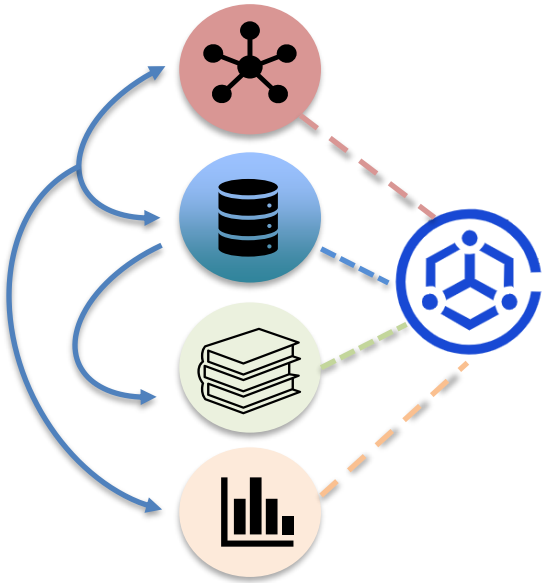
Amend Manual on WIS

Complete Guide to WIS

Specify Monitoring

Initiate the transition phase





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Identify Success Criteria

Running Global Services

Global Broker
- France Q3/2022
- China
- Australia

Global Cache
- Germany Q3/2022
- Australia
- Japan
- USA - Synoptic

Global Discovery Catalogue
- Canada
- Korea
- China

Global Monitoring
- Morocco

Sharing data through GS by running WIS2 Node

Algeria
Argentina
Italy
Morocco
Sweden

ECMWF
EUMETSAT

Sharing data through GS covering all WMO programmes by running WIS2 Node

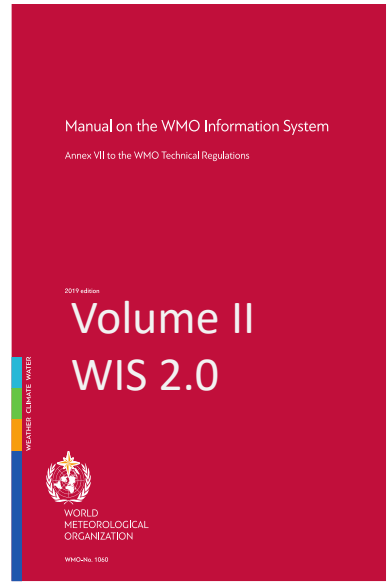
Hydrology:
- Argentina
- Brazil
- Urugway

Climate:
- Belize

Cryosphere:
- Norway

Ocean

WIS 2.0 Validate Technical Regulations



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Thank you!

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